

Regulation Running Riot

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Goal and Scope. In the early 1970s in London, when we launched an undergraduate teaching program in Environmental Science, both students and staff believed that a rigorous system of regulating pollution was needed. Thanks especially to the availability of Gas Liquid Chromatography (1952) and later of High Pressure Liquid Chromatography (ca 1968), organic pollutants could be detected at low levels in air and water. In 1971, when the U.S. Environmental Protection Agency (EPA) was founded, there was a consensus that regulation should be pursued to the limits of detection. Indeed the EPA did set a limit for arsenic in water that went beyond existing detection techniques, defending this on the grounds that "over the years needed for the administrative procedures, analytical chemistry would have sufficiently improved the detection level."

Methods. Examples of rigorous regulations abound. The first EC Directive for the control of pesticides in drinking water (1980) set an extremely stringent catch-all level of 0.1 µg/L and this level was retained in the expanded Directive of 1998. The regulatory aim for a "zero option" for substances adjudged to be carcinogenic also led to very strict levels being set, for example for dioxins and arsenic.

Industrial interests have questioned the ever stricter controls, and in recent years there has been more sympathy with their view. This has arisen because of the steep exponential rise in costs for relatively modest improvements in control levels as one approaches a completely clean environment - a "zero option." The EPA has rated costs of its Final Rule for dioxin emissions from incinerators at five times the benefit. Other more extreme examples can be quoted.

Results and Conclusions. The illogicality of the present position is evident because, while arguing about the carcinogenicity of dioxins, society is using large quantities of proven human carcinogens such as benzene and vinyl chloride. Superfund sites are being cleaned to higher standards than exist in their surroundings, smoking continues to be a scourge and indoor pollution is unregulated.

Recommendation and Outlook. Wealthy countries enjoy long life expectation with high GDPs and can afford their present effective levels of control; there is no need for them to enforce still higher levels at excessive cost. Reining back on these costs would save energy in sympathy with the Kyoto Protocol and enable funds to be better applied, for example to better monitoring of existing controls or helping poorer countries with their much higher pollution levels.